**IT Applications Unit 3, AOS 1, Online Communities**

Complete the following, from pgs, 14-18: **Network communication standards**

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**Network communication standards**

1. Why are network standards required?  
   Network standards are required in order to make sure all hardware and software components are compatible with all networks.
2. What is a protocol?  
   A protocol is a rule that is put in place so that computers have set ways to transmit data.
3. What is the OSI?  
   The Open Systems Interconnection is a communication standard that uses seven layers.

**Ethernet**

1. Describe the nature of Ethernet.  
   Ethernet is a network standard that uses a single cable across all devices in the network.
2. What are frames?  
   Frames are short messages between nodes which contain packets of information.
3. Identify the 4 components of all Ethernet frames.  
   Destination address, sending address, data and parity information.
4. Fig. 1-9 on p 17 lists the Ethernet type, cable type, maximum length and transfer rate for Ethernet transmissions. The College typically uses 100BaseTX, Cat 5 or10Gbase-T. What are their respective maximum lengths and transfer rates?  
   100BaseTX, max length – 85m, transfer rate – 100mbps  
   10GbaseT, max length – 85m, transfer rate – 10gbps

**TCP/IP**

1. Describe the nature of TCP/IP.  
   TCP/IP defines how computers construct packets of data, the address scheme for sending and receiving, error checking, and how the flow of messages is regulated.
2. TCP/IP uses smaller packets than other protocols. Why is this an advantage on the internet?  
   The smaller packets are an advantage on the internet because they allow the network to use load balancing.

**802.11 wireless standard**

**1** What does this standard do?  
 Allows devices to communicate wirelessly over a relatively small distance.

2 What is a Wi-Fi network?  
 A Wi-Fi network allows computers that are up to 50 metres apart to be connected without the need for wires.

3 Different wireless standards transmit at different frequencies. What is the advantage of the newer 802.11n standard?  
 The 802.11n standard operates at 5 or 2.4 GHz and is faster and supports a larger range.